

Using Light Energy to Build Matter

Process and Procedures

Part B: A Cell's View of Photosynthesis

Pages 446-454

Date _____

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1. Copy and complete the data tables.

Time (min)	# of discs floating
1:00	
2:00	
3:00	
4:00	
5:00	
6:00	
7:00	
8:00	
9:00	
10:00	

Time (min)	# of discs floating
11:00	
12:00	
13:00	
14:00	
15:00	
16:00	
17:00	
18:00	
19:00	
20:00	

Time (min)	# of discs floating
21:00	
22:00	
23:00	
24:00	
25:00	
26:00	
27:00	
28:00	
29:00	
30:00	

2a. What is required for photosynthesis to occur?
Write the formula.

2b. Where in a plant cell does photosynthesis occur?

2c. Where did the leaves get the “ingredients” needed for photosynthesis in this activity?

2d. Why did the leaf discs float during photosynthesis?

3. Graph your data from the tables.

4. Write a paragraph that describes the process of photosynthesis using the following terms:

- *light energy*
- *oxygen*
- *chloroplast*
- *chemical energy*
- *glucose*
- *carbon dioxide*
- *chlorophyll*
- *photosynthesis*
- *water*

Using Light Energy to Build Matter

Photosynthesis Brings Energy and Matter into Living Systems

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Heterotroph

an organism that cannot make its own food

Autotroph

an organism that makes its own food

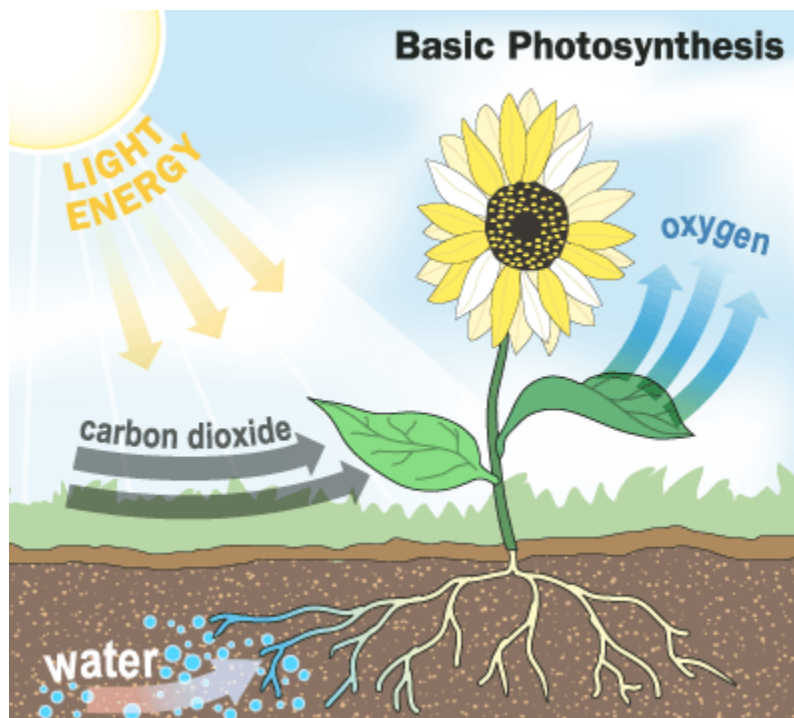
Photosynthesis

process used by plants use light energy from the sun to make their own food (sugar)

photo = light

synthesis = to make

Only happens in PLANTS!!!



How photosynthesis occurs

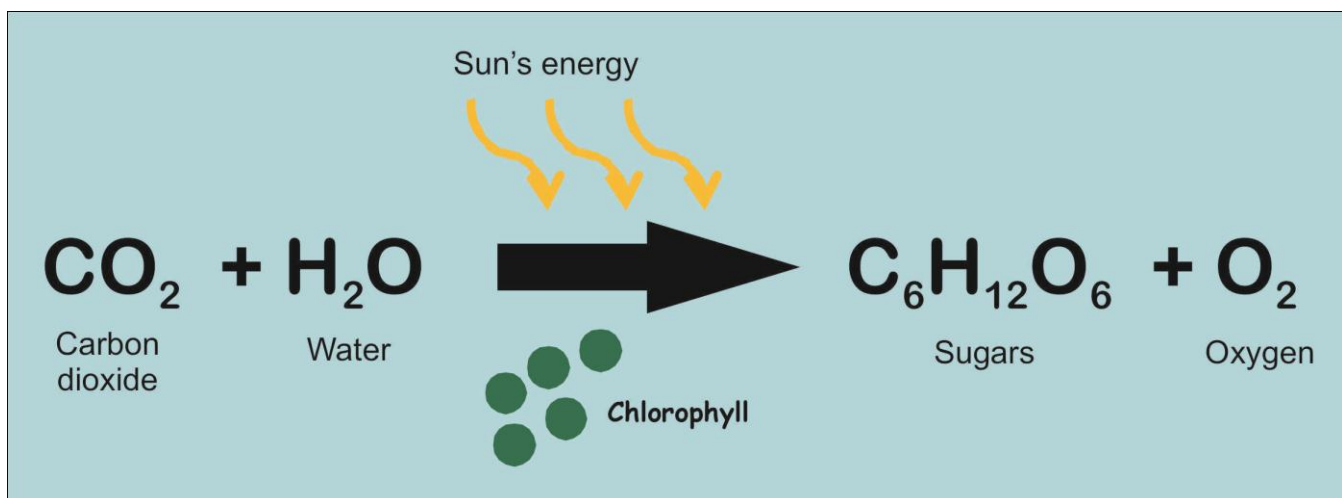
plants take in carbon dioxide through openings (stomata) in their leaves

Water is taken in by the roots

Energy from the sun splits the water into hydrogen and oxygen

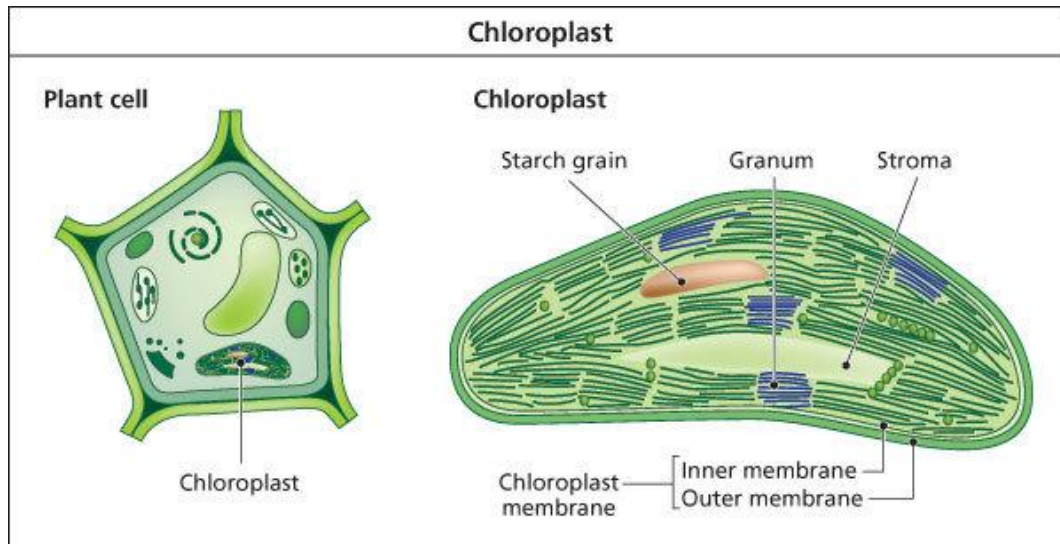
Hydrogen combines with carbon dioxide to make glucose

Oxygen leaves through the stomata



Chloroplasts

organelles in plants where photosynthesis occurs



Chlorophyll

green pigment in the chloroplasts
that absorbs light energy from the
sun